

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A friction brake assembly to act between a pair of relatively moveable components, comprising:

a braked member connected to one of said components,

a carrier connected to the other of said components;

a friction pad attached to said carrier for engagement with said brake member;

a first actuator operable upon said carrier to move said friction into engagement with said brake member;

a second actuator operable upon said carrier to move said friction pad away from said brake member; and

a control to operate selectively said first and second actuator.

2. A friction brake according to claim 1 wherein a resilient element is interposed between said first actuator and said carrier to maintain a bias against said brake member.

3. A friction brake according to claim 2 wherein said resilient element is a beam projection from said carrier.

4. A friction brake assembly according to any preceding claim wherein said first and said second actuators each comprise at least one shape memory alloy element.

5. A friction brake assembly according to claim 4 wherein said shape memory alloy element is a tensile element and said controller change the length of said element to actuate said brake.
6. A friction brake assembly according to claim 5 wherein said controller supplies an electrical current to respective ones of said elements to change the length thereof.
7. A friction brake assembly according to any preceding claim wherein said braked member is a drum rotatably mounted on said other member and said carrier is pivotally secured to said actuator for movement into or out of engagement with said drum.
8. A friction brake assembly according to claim 7 wherein said carrier includes a portion extending radially relative to said drum and said actuators and between spaced locations on said other member and said portion.
9. A friction brake assembly according to claim 8 wherein said portion is a flexible beam to couple resiliently said actuators to said carrier.
10. A friction brake assembly according to claim 8 or 9 wherein said actuators are tensile members formed from a shape memory alloy.
11. A friction brake assembly according to claim 10 wherein each of said actuators includes a plurality of tensile members arranged in parallel.
12. A friction brake assembly according to claim 11 wherein said members are electrically connected in series and a current passing through said tensile members effects foreshortening of said members.

13. A friction brake assembly according to any one of claims 7 to 12 wherein said carrier is pivotally mounted for movement about an axis parallel to but spaced from the axis of rotation of said drum.
14. A prosthesis having a pair of limbs pivotally connected on one another by a mechanical joint, an actuator connected between said limbs to effect relative rotation there between and a brake acting to inhibit such relative motion, said brake being operative upon said actuator to inhibit further movement in said joint.
15. A prosthesis according to claim 14 wherein said actuator includes a pair of relatively displaceable components to change the length of said actuator and said brake acts between said displaceable components.
16. A prosthesis according to claim 15 wherein said components are interconnected by a screw thread such that relative rotation there between causes a change in the length of said actuator and said brake acts to inhibit relative rotation.
17. A prosthesis according to claim 16 wherein said brake includes a rotatable drum and a carrier having a brake shoe engageable with said drum.
18. A prosthesis according to claim 17 wherein said shoe is engageable with said drum by foreshortening of a shape memory alloy tensile member.
19. A prosthesis according to claim 17 wherein said shoe is releasable from said drum by foreshortening of a shape memory alloy tensile member.
20. A prosthesis according to either claim 18 or 19 wherein said tensile member is connected to said shoe through a resilient connection.